Back Pain/Discomfort in Pregnancy: Invisible and Forgotten

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Abstract

This paper is a comprehensive literature review of original research on the nature of back pain/discomfort in pregnancy. The causes of back pain/discomfort in pregnancy are reviewed and discussed, and the clinical manifestations and implications are explored. This analysis revealed that approximately 50% of pregnant women experience back pain/discomfort with little or no intervention from their health care providers. Thus, back pain/discomfort in pregnancy seems to be invisible and forgotten in contemporary antenatal care. Evidence-based guidelines are provided for both women and health professionals as a way of increasing attention to the prevention of unnecessary back pain/discomfort during pregnancy.

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At some point during their pregnancy, many pregnant women report back discomfort. Most authors have reported an incidence rate of approximately 50% (Berg, Hammar, Moller-Nielsen, Linden, & Thorbald, 1988; Melzack & Belanger, 1989; Orvomaa, Hiilesmaa, Poussa, Snellman, & Tallroth, 1997). For too long, back pain/discomfort in pregnancy has been viewed by many as "normal" and to be "expected" in pregnancy (Fast et al., 1987). Perhaps women who are pregnant might *expect* back pain/discomfort in pregnancy, but should they *accept* it?

During antenatal care, women will expect their caregivers to have knowledge of relief measures to prevent or reduce back pain/discomfort in pregnancy. The pur-

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pose of this review paper, therefore, is to examine the relevant literature to gain a greater understanding of the nature of back pain/discomfort in pregnancy. Guidelines and recommendations for the evaluation and improvement of the clinical practice of health care professionals will be provided, based on the evidence identified.

Up until the 1970s, back pain/discomfort in pregnancy was not investigated. The first report of estimated incidence of 48% in 1977 (Mantle, Greenwood, & Currey) is only underlined by the published increase to 54.8% in 1994 (Oriveto, A. Achiron, Ben-Rafael, Gelernter, & R. Achiron). In an era of accountability and consumer power, such a lack of attention to this common problem in pregnancy is remarkable.

Perception of Pain

How is Pain Perceived?

Whether or not a woman experiences pain/discomfort remains primarily subjective. It is important to consider how a pregnant woman perceives pain in order to understand the significance and importance of pain to her. For this reason, the perception of pain will be discussed first.

Pain is a personal experience for each individual (Bachman, 1995). Factors such as cultural and social circumstances, counter-stimuli, fear and anxiety, personality, fatigue, expectations, and distraction from pain can affect how a person perceives and copes with pain (Bachman, 1995; Bevis, 1993). Age is an important factor that alters the perception of back pain/discomfort during pregnancy. Younger women have been found to complain about pregnancy-related side effects more often. They may be more sensitive to hormonal changes in pregnancy and may have a different attitude (perception) toward pain than older pregnant women (Ostgaard & Andersson, 1991; Ostgaard, Andersson, Schultz, & Miller, 1993).

Only one study refers to the many psychological changes that take place during pregnancy and their possible effect on women's perception of back pain/discomfort during pregnancy (Mens, Vleeming, Stoeckart, Stam, & Snijders, 1996). Despite these well-known psychological changes, no further mention is made in any of the other research, which suggests that correlation with psychological changes during pregnancy is yet another largely unexplored aspect of back pain/discomfort in pregnancy. Much of the literature on a pregnant woman's perception of pain is often a reflection on the style and method of the research—for example, how data is gathered and reported, rather than the "real" lived experience.

Defining the Meaning of Back Pain/Discomfort in Pregnancy

It is important to draw attention to the lack of consistency in relation to the language used in the concept of back pain/discomfort during pregnancy and what is meant by *back pain*. For example, where one article makes reference to backache or back pain, women in other studies refer to discomfort in their back. Some authors use a combination of terms, while others describe what they think pregnant women are feeling (e.g., "tenderness"). Nothing in the literature is mentioned about a woman's ability to cope better with pain during pregnancy based on previous experiences of coping with either acute or chronic pain/discomfort.

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As a result of the inconsistent manner in which back pain has been defined, it is difficult to compare studies for the purpose of validating or confirming results. Hence, no two studies use the same measurements and, although results may be similar (e.g., 50% incidence of pain), these studies define and measure different variables. In summary, much of the research on back pain/discomfort in pregnancy fails to describe the parameters

and precise meaning of what is actually being investigated. This creates a problem for replication when a definition of terms is not clear. It is also not clear if the range of terms and opinions on what is meant by back pain reflect the value that authors, practitioners, and women themselves place on a pregnant woman's experience of pain, and how those values would be similar or different.

A review of maternity nursing textbooks revealed that information about back pain/discomfort in pregnancy was brief, broad, and nonspecific (Brayshaw, 1993; Klein, 1995). Hormonal changes were related to back pain/discomfort in pregnancy with no mention of any other possible cause or underlying factor, such as constipation and straining (Fast et al., 1987) or sacro/iliac dysfunction (Berg et al., 1988), the most common cause of back pain/discomfort in pregnancy.

The studies reviewed rarely gave definitions of antepartum back pain, its location, or even gestational stage. Therefore, in this paper, the "back pain/discomfort" investigated will incorporate the wide range of women's subjective experiences with this sensation anytime during a pregnancy.

Problems with Reporting/Gathering Data

Since much of the research that reported on back pain/discomfort in pregnancy relied on retrospective interviews, one must question the validity of self-reporting and recall bias. Much of the later research has partially addressed this issue by taking a more holistic approach. These researchers ask about the quality, location, and consequences of the pain and use pain drawings and diagrams to verify the results obtained by interview (Brynhildsen, Hansson, Persson, & Hammar, 1998; Fast et al., 1987; Jimenez, 1998; Ostgaard et al., 1993). Hansen and colleagues were the only authors to acknowledge the difficulties in distinguishing subjective symptoms of lower back pain/discomfort in pregnancy (Hansen, Jensen, Larsen, Wilken-Jensen, & Petersen, 1996). This beginning recognition emphasizes the need for more prospective qualitative research and measurement of back pain/discomfort in pregnancy and its effects on lifestyle and well-being in order to define (conceptually), validate, and strengthen quantitative findings. A beginning point would be a qualitative review of the existing research for themes leading to a conceptual framework.

The Phenomenon of Back Pain/Discomfort in Pregnancy

The review of the literature suggested that several physiological changes occur in pregnancy that potentially may cause back pain/discomfort (Berg et al., 1988; Fast et al., 1987; Mantle et al., 1977; Melzack & Belanger, 1989; Orvomaa et al., 1997; Oriveto et al., 1994). These potential causes of back pain/discomfort in pregnancy can best be described by examining three aspects: (1) functional back changes, (2) dysfunctional back changes, and (3) additional factors that contribute to back pain/discomfort in pregnancy.

Functional Back Changes

Functional changes can best be considered as those changes that occur in pregnancy that may cause mild pain/discomfort. They are essentially a normal occurrence of the pregnant body adapting to the increasing weight of the enlarging uterus and its contents, stretching of the surrounding tissues, and the resultant posture changes (Mantle et al., 1977; Oriveto et al., 1994). Most available information is generalized and nonspecific. What is actually meant by the term *posture* is not well-defined, although the changes to spinal alignment are visually apparent.

Figure 1 illustrates the alteration to normal posture

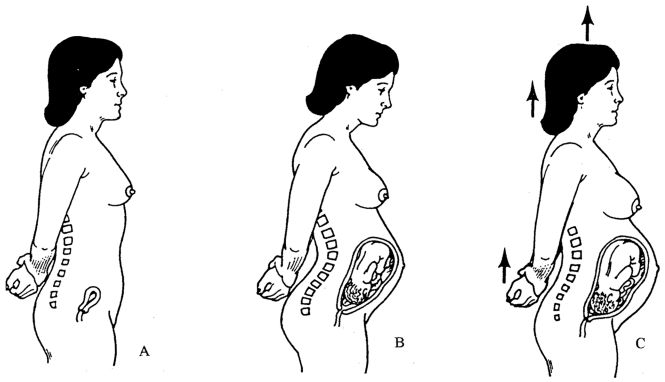

Figure 1 Postural Changes during Pregnancy
A–Nonpregnant; B–Incorrect posture; C–Correct posture.

Note: Copyright 1999 by Mosby. Reprinted with permission. Klein, P. M., (1995). Anatomy and physiology of pregnancy. In I. M. Bobak, D. L. Lowdermilk, & S. E. Jensen (Eds.), *Maternity nursing* (4th ed., p. 104). St. Louis, MO: Mosby.

that occurs in pregnancy. The arrows in the figure show the direction of posture change required in order to realign the natural curves of the spine.

With several earlier inquiries (Fahrni, 1975; Fast et al, 1987; Klein, 1995), no evidence of lordotic pressure being addressed in relation to its effects on pregnancy was reported until 1993 (Ostgaard et al.). The degree of lordotic pressure may also be influenced by relaxin, a pregnancy hormone released to allow joints to become more flexible (Hansen et al., 1996; MacLennan, Nicolson, Green, & Bath, 1986; Petersen, Hvidman, & Uldberg, 1994). A long-standing debate exists as to whether or not the effects of posture and lordotic pressure leading to back pain in pregnancy are functional changes that can contribute to the longer-term outcome of disc degeneration and low back pain later in life.

It is clear that normal physiological mechanisms of pregnancy can be a cause of back pain/discomfort. This creates two areas of concern requiring further research to provide the evidence for precision in practice. First, how much of what women classify as *back pain* or *discomfort* is within the normal experience of a changing, adapting body, and how do women individualise, differentiate, or perceive pain/discomfort? Secondly, does all back pain/discomfort necessarily mean dysfunction and, since pain is subjective, when do normal physiological changes become "painful" and, thus, dysfunctional for pregnant women? In other words, what is the range of functional, adaptive pain, and when does it signal dysfunction with potential long-term outcomes?

Dysfunctional Back Changes

Dysfunctional changes can be described as physiological mechanisms that occur during pregnancy, which for some reason are beyond the range of expected changes. For example, movement of the pelvic bones is a normal physiological finding in pregnancy due to hormonal changes. However, "separation of the pubic bones or enlarged mobility of the pelvic girdle" (Mens et al., 1996, p. 63) is excessive and represents dysfunctional changes.

The most commonly reported physiological reason for severe low back pain is strain on the sacroiliac joints (Berg et al., 1988; Fast et al., 1987; Mens et al., 1996). The added strain can determine the presence and/or severity of abnormal changes to the physiology of pregnancy, thus determining the presence and/or severity of back pain/discomfort in pregnancy. With this knowledge about the most prevalent major dysfunctional set of changes in pregnancy, it is surprising that more research has not focused on measuring those changes and identifying ways of preventing and reducing back pain/discomfort in pregnancy. Such findings may help prevent women from experiencing unnecessary pain and potential disc degeneration.

Additional Factors

Additional factors that influence back pain/discomfort in pregnancy are those that exacerbate functional and dysfunctional physiological symptoms. They place a woman at more risk of developing or worsening back pain/discomfort in pregnancy. Previous low back pain can be related to dysfunctional pain/discomfort as a result of pre-existing abnormal back physiology (Ostgaard, Andersson, & Karlsson, 1991).

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Examples of additional risk factors include being in a strenuous occupation, use of hormones (e.g., oral contraceptives), and low pain threshold. For example, women with strenuous occupations reported significantly more severe low back pain and sacroiliac joint dysfunction than women with lighter occupations (Berg et al., 1988; Brynhildsen et al., 1998). Aside from what is known about the role of relaxin in softening joints and ligaments, other hormones may be responsible for back pain/discomfort in pregnancy. For this reason, increased attention has been paid to oral-contraceptive use and back pain in pregnancy. Research into oral-contraceptive use and back pain/discomfort has become problematic in the way the research has been conducted—specifically, problems with sample size (Brynhildsen et al., 1998; Wreje, Isacsson, & Aberg, 1997), limits within methods used (Berg et al., 1988), lack of scientific evidence (Brynhildsen, Ekblad, & Hammar,

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1995), and recall bias (Svensson, Andersson, Hagstad, & Jansson, 1990). Perhaps with more controlled research, information will be more valid. Until that time, the existing information remains unreliable and only a consideration.

Parity, weight, age, type of back pain, exercise habits, and work satisfaction are additional factors that have not shown a consistent difference between women without and women with low back pain during pregnancy (Berg et al., 1988; Ostgaard et al., 1993). However, age as an influencing factor in back pain/discomfort was disputed when it was identified that younger women were at a higher risk of back pain/discomfort in pregnancy (Ostgaard et al., 1991). Table 1 depicts factors that have been identified as being potentially responsible for exacerbating back pain/discomfort during pregnancy.

Fast et al. (1987) suggest that the etiology of pain in each trimester may vary. This may explain the reported variation in individual experience of back pain/discomfort in pregnancy, if *trimester* is not considered an important variable. Again, the need for more precise research is emphasised to ascertain potential relationships between risk factors that may affect the presence or absence of back pain/discomfort in pregnancy.

Discussion

As back pain/discomfort is normalised, it also becomes under-reported. Being alert to the various ways back pain/discomfort manifests itself is important knowledge for clinicians who are involved with women in perinatal care.

Table 1 Women at Risk of Back Pain/Discomfort in Pregnancy

- Women with Previous Low Back Pain (Not Related to Pregnancy)
- Women Who Smoke
- Women with Strenuous Occupations
- Women with a Naturally Large Lumbar Lordosis
- Women Who Have Previously Been Pregnant
- Young Women
- Women of Short Stature

During Pregnancy

Much information in the perinatal pain literature focuses on helping women cope with pain in labour rather than during pregnancy. However, education could do much to relieve the clinical manifestations that aggravate back pain/discomfort during pregnancy (e.g., forward bending, sitting, standing, lifting, straining during bowel movements, and coughing). It is suggested that pregnant women tend to have more sick leave due to back pain/discomfort. Routine activities of daily living can also be affected as a result of back pain/discomfort during pregnancy, such as the inability to complete household chores like cleaning and floor mopping (Berg et al., 1988; Brynhildsen et al., 1998; Fast et al., 1987; Ostgaard et al., 1993). Additionally, it is far too common for pregnant women to experience back pain/discomfort when carrying and lifting their other small children. Perhaps if pregnant women were made aware of correct movements and postures and of the risks associated with incorrect lifting and carrying during pregnancy, this problem would not be so common—a concept also supported by the literature (Hansen et al., 1996; Jimenez, 1998).

. . . education could do much to relieve the clinical manifestations that aggravate back pain/discomfort during pregnancy . . .

Before and After Pregnancy

The phenomenon of back pain/discomfort in pregnancy can also be explained by a complex interaction of clinical manifestations present both before and after pregnancy. Calculations demonstrate that a history of back pain/discomfort could explain 40% of back pain/discomfort that occurs during pregnancy (Ostgaard & Andersson, 1991). Significant correlations have been shown to exist between low back pain/discomfort during pregnancy and acute back pain/discomfort before pregnancy, during de-

livery, after childbirth, and in subsequent pregnancies (Brynhildsen et al., 1998; Diakow et al., 1991; Melzack & Belanger, 1989).

Thus, the importance of preventing back pain/discomfort in pregnancy is obvious. It is vital to use the available evidence to design prevention and health-promotion practices for pregnant women.

Clinical Implications

Prevention

It is important to prevent the onset of back pain/discomfort in pregnancy, as well as to prevent worsening of existing back pain/discomfort in pregnancy. Women need to be free from pain and fatigue so they can cope with the profound psychological changes of pregnancy leading to their personal development and evolving maternal identity (Bibring, Dwyer, Huntington, & Valenstein, 1961; Rubin, 1975; Rubin, 1976; Zajicek, 1981). Furthermore, it is worthwhile considering whether a woman has the emotional and/or physical ability to participate in other prevention-based programs (e.g., reducing or stopping smoking) when affected by back pain/discomfort.

Despite evidence on the importance of antenatal education and prevention being recognised as early as 1982 (Maring-Klug), no real emphasis of this occurs in current practice. Additionally, evidence does not exist by way of decreased incidence of back pain/discomfort in pregnant women, as indicated by the figures already cited.

Assessment

During antenatal care, it is essential that pregnancy care providers and perinatal educators identify women who may be at risk for long-term back pain. Consequently, special attention can be focused on the back during labour and delivery and, again, at postnatal visits so that these women can be properly assessed and correct treatment organised. The need for improved assessment of pain as part of postnatal care has recently been described in an earlier issue of this journal (Stainton, Edwards, Jones, & Switonski, 1999).

Assessment of posture, history, and exercise pattern—particularly during the early stages of pregnancy—is an important feature in preventing a pregnant woman's experience with back pain/discomfort (Waddell & Turk, 1992). Much more focus is spent on ultrasound and other investigations that address the front of a woman's body during pregnancy compared to the lack of attention and technology for investigating the back of her body.

Jimenez (1998) asserts that a thorough assessment of pain is paramount in selecting the most appropriate tools to manage existing pain and prevent it from worsening. The Visual Analogue Scale continues to be invaluable in understanding the objective value and subjective meaning of pain. Accurate and recorded assessment of pain is important in order to monitor the outcomes of any suggested intervention and to assess change over time.

Other areas of assessment include monitoring a pregnant woman's quality of life when activities of daily living are affected and measuring the psychological impact of ongoing pain/discomfort in pregnancy. Retrospective research contends that 19% of women refrained from becoming pregnant again due to fear of the return of back pain they had experienced in their first pregnancy (Brynhildsen et al., 1998). Findings such as these stress the need for more clinical attention during perinatal care.

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Pain Relief Methods

Once assessed, finding appropriate pain relief methods is important. The repertoire of management for back pain/discomfort in pregnancy is not large.

Exercises

Education, training and exercise programs, and low back strengthening are potential methods of reducing low back pain/discomfort in pregnancy (Diakow et al., 1991; Klaber Moffett et al., 1999; Oriveto et al., 1994; Ostgaard, Zetherstrom, Roos-Hansson, & Svanberg, 1994). An example of such exercises is presented in Figure 2.

The desire and determination for a healthy back during pregnancy is placed largely on each individual

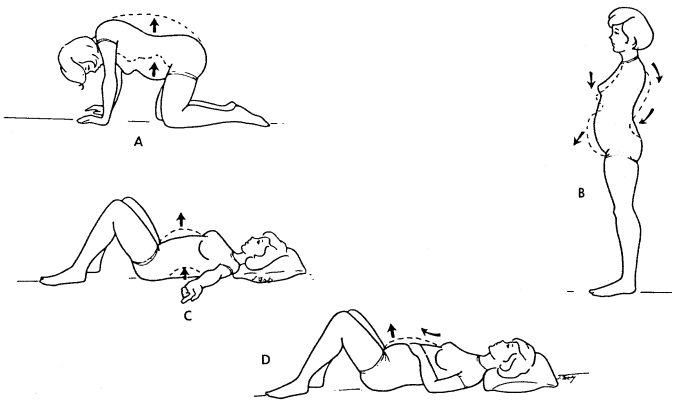

Figure 2 Exercises for Back Pain/Discomfort in Pregnancy

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woman who will need education and support to adhere to a needed exercise program. Effective pain relief can often best be achieved by bed rest and participation in exercise programs (Mens et al., 1996; Phillips & Meyer, 1995). One study showed a disappointing noncompliance by pregnant women in exercise classes and programs (Mantle et al., 1977). Current outcomes are not available, and these programs may not be accessible to every pregnant woman. This suggests that results of research on the benefits of participation by pregnant women in exercise programs could be skewed by the benefits of individual motivation.

Medications

With the advances of pharmacology, it has become all too easy to rely on chemical means of pain relief. Most medications only provide short-term relief from pain and are best contraindicated during pregnancy. However, they may be needed in order for the woman to do the exercises required to strengthen the back.

Alternate Therapies and Other Disciplines: Why are Women Seeking an Alternative?

With the apparent lack of information and the attitude of normalising and discounting back pain/discomfort in pregnancy by traditional health practitioners, both pregnant women and practitioners have expressed a growing interest in alternate therapies for relieving back pain in pregnancy. Acupuncture, homeopathy, the McTimoney method, transcutaneous electrical nerve stimulation (TENS), acupuncture-like TENS (ALTENS), and herbal therapies are appearing in the literature for use during pregnancy (Beal, 1998; Cartlidge, 1997; Hsu & Diehl, 1998; National Institute of Health, 1998). Table 2 provides an outline and description of alternative pain therapies discussed below.

Table 2 Suggested Alternative Pain Therapies for the Treatment of Back Pain/Discomfort in Pregnancy

Type of Alternative Therapy	Authors	Description of Therapy
Acupuncture	Bensoussan (1994) NIH (1998)	**Acupuncture**—Activation and movement of "vital energy" that increases the flow of energy and clears stagnation in painful area (e.g., the back) through the placement of needles.
McTimoney Method	Cartlidge (1997)	**McTimoney Method**—Gentle, whole-body approach aims to correct the alignment of bones of the spine and other joints of the body to restore nerve functions, alleviate pain, and promote natural health.
Spinal Manipulation, including Craniosacral (Upledger) Therapy	Gadsby and Flowerdew (1997) Phillips and Meyer (1995) Thorley, Rouse, and Campbell (1997)	**Spinal Manipulation**—Chiropractic treatment performed by a series of short amplitude thrusts with the hands. **Craniosacral Therapy (CST)**—A gentle, hands-on method of evaluating and enhancing the function of the membranes and cerebrospinal fluid that surround and protect the brain and spinal cord. Strengthens the body's ability to alleviate a range of illness, pain, and dysfunction.

(continued on next page)

Table 2 (Continued from p. 7)

Type of Alternative Therapy	Authors	Description of Therapy
Transcutaneous Electrical Nerve Stimulation (TENS)	Melzack & Belanger (1989) Thorley and Rouse (1998)	**TENS**—The application of a high-frequency, low-intensity electrical stimulus.
Massage	Mens et al. (1996)	**Massage**—Therapeutic stroking and kneading of the body.
Massage, Lifestyle Change, Hot Baths Birthing Pools	Mantle et al. (1977) Thorley and Rouse (1998)	**Hot Baths / Birthing Pools**—Rely on the therapeutic advantages of heat from warm water as pain relief and the use of water for buoyancy, thus taking stress off joints and muscles.
Lifestyle Change	Beal (1998) Brynhildsen et al. (1998) Oriveto et al. (1994) Ostgaard et al. (1991)	**Lifestyle Change**—Refers to activities of daily living (e.g., lifting, bending, household chores, etc.) that can be reduced and/or revised in order to place the least amount of stress on the spine and surrounding muscles. Table 4 also summarises lifestyle changes that can be made.
Exercises, Lifestyle Change	Maring-Klug (1982) Ostgaard et al. (1994)	**Excercises**—Including correct posture, lifting, and exercises similar to those described in Figure 2.
Homeopathy, Acupuncture, Acupressure, Spinal Manipulation, Massage, Lifestyle Change, Psychology, Relaxation Techniques (Including Imagery), Spiritual Healing, Hypnosis, Folk Remedies, Energy Healing	Beal (1998)	**Homeopathy**—Based on the principle that the body will be stimulated and healed with the use of a substance that aims to restore a state of balance. **Acupressure**—Similar to acupuncture; uses pressure from hands, thumbs, fingers, and sometimes other parts of the body to affect the flow of *ch'i* (vital energy). **Psychology**—Talking about the expected/normal pain/discomfort of pregnancy can be an alternate pain therapy as women have a more realistic expectation and are able to explore certain issues to realise that pain/discomfort is a reality, not an obstacle. The remainder of the therapies mentioned in this paper were not elaborated on by the author.
Osteopathy / Homeopathy	Thorley and Rouse (1998)	**Osteopathy**—Emphasizes the importance of normal body functions and manipulative methods to detect and correct faulty structure.
Trochanteric Belt	Berg et al. (1988)	**Trochanteric Belt**—An abdominal brace to support the pelvis, abdomen, and spine.
Alternate therapies used in treatment of pain nonspecific to pregnancy:		
Psychology	Hadjistavropoulos et al. (1994) Strong et al. (1994) Turner et al. (1990)	
TENS	Gadsby and Flowerdew (1997)	
ALTENS	Gadsby and Flowerdew (1997)	
Acupuncture	Ernst and White (1998) Hsu and Diehl (1998)	
Physiotherapy	Oriveto et al. (1994)	

Despite the wide use and growing acceptance of complementary therapies, no literature could be located that mentioned the safety and/or benefits of any of the therapies as an acceptable method of treating back pain/discomfort in pregnancy (Bensoussan, 1994). Most of the information on pain management with these therapies is related to use in labour and birth. Alternate practices offer choice, insight, and a different perception of how to treat ailments with the potential to connect mind, body, and spirit, which is a goal of many alternate therapies (Bensoussan, 1994). This ultimately reflects a client-centred approach to treatment rather than a disease-centred approach. This personal care and assessment is another reason women are turning to these therapies for relief.

The benefits of using alternate therapies for the management of chronic back pain in the general population are widely acknowledged (Ernst & White, 1998; Gadsby & Flowerdew, 1997). Therefore, the role of alternate therapies in the treatment of back pain/discomfort in pregnancy cannot be discounted; parallel outcomes would be a realistic expectation.

Surprisingly, Berg's study was the only research to examine the positive effects and outcomes of treatment intervention methods such as the trochanteric belt and mobilization for women with back pain/discomfort in pregnancy (Berg et al., 1988). Such results should set precedence for the focus of future studies to make attempts to maximise this knowledge by further investigation of those areas that show such positive results.

Acupuncture and the use of alternate therapies, as discussed, may be the key to preventing the development or worsening of back pain/discomfort in pregnancy. This is certainly one area in the literature where there has been much growth, interest, and research over the last 10 years. Exercise programs have proved to be effective for women experiencing continued pain/discomfort originating from pregnancy (Diakow et al., 1991). The objectives for care and treatment for these women are similar for people with chronic back pain. Others agree that supervised exercise programs play a large role in the treatment of chronic back pain (Frost, Klaber Moffett, Moser, & Fairbank, 1995). Likewise, women who develop chronic back pain as a result of pregnancy require assessment of pain intensity, functional abilities, attitudes, behaviour, coping strategies, and psychological approach (Hadjistavropoulos & Craig, 1994; Strong, Ashton, & Stewart, 1994; Turner, Clancy, McQuade, & Cardenas, 1990).

Despite what is known about the use of alternate therapies for back pain/discomfort in pregnancy, little information is actually being filtered down to women in everyday management of pregnancy in order to prevent, reduce, and/or eliminate (where possible) back pain/discomfort. The role of antenatal caregivers in providing such information is hindered by lack of publication and research on the topic. Furthermore, if women expect back pain/discomfort in pregnancy and, consequently, do not ask questions and report incidences, the need to study and provide information on back pain/discomfort in pregnancy becomes less of a priority for caregivers than other pregnancy complaints (e.g., nausea and indigestion).

Rethinking How to Care for Pregnant Women with Back Pain/Discomfort

Because pregnancy care providers and perinatal educators are at the forefront of caring for pregnant women, urgent revision of antenatal care is needed—not only *what* is taught to women but also *how* it is taught. Women who have experienced back pain/discomfort during their pregnancies have been found to offer "lifestyle tips" and show new mothers how to reduce the likelihood of back complications, both antenatally and postnatally (Thorley, Rouse, & Campbell, 1997). Women would therefore have the advantage of seeing pregnant women who have been able to change or adapt their lifestyles while protecting their backs. This method of learning may be more comprehensible and practical for women, as opposed to learning an exercise from a pamphlet or book where principles are hard to understand and/or relate to everyday life.

Guidelines and resources are needed for pregnant women so they can receive knowledge and options about doing things smarter, not harder, in order to prevent unnecessary back pain/discomfort during pregnancy. Table 3 summarises some health promotion strategies for health professionals to consider when caring for pregnant women, while Table 4 summarises some health promotion strategies that pregnant women can be given to prevent or reduce back pain/discomfort during pregnancy.

Table 3 Health Promotion Strategies for Use by Health Professionals

- Effective Antenatal Back/Posture Assessment
- Identify Women at Risk of Developing/Worsening Back Pain/Discomfort during Pregnancy
- Provide Thorough Assessment of Those with Pain
- Assess the Impact of Psychological Changes on any Back Pain/Discomfort
- More Research (Including Qualitative)
- Advice on Posture and Basic Mobility ("LifestyleTips")
- Specific Interventions for Women during Labour and Delivery Who Have Been Identified "At Risk" during Pregnancy
- Identify Women Who Are Still Experiencing Back Pain/Discomfort at Postnatal Visits and Refer Them on for Further Investigation/Treatment

Table 4 Health Promotion Strategies for Use by Pregnant Women

- Participate in Exercise Programs during Pregnancy, Including Exercising in Water (More Physically Supportive)
- Pre-conception Strengthening of Abdominal Muscles to Support Back
- Know that Back Pain/Discomfort May Exist in Pregnancy, But Is Not Necessarily "Normal"
- Report Incidence of Back Pain/Discomfort to Health Professionals So That It Can Be Formally Assessed and Interventions Can Be Implemented Where Appropriate
- Ensure Regular Bowel Motions and Avoid Straining
- Be Aware of Correct Posture and Bending/Lifting Practices
- Bed Rest
- Avoid Constipation or Straining with Stool
- Take Sick Leave When It Is Indicated; Know Your Body and Its Limits (When "Enough is Enough")
- Apply Heat to Uncomfortable/Painful Area (e.g., Hot Packs, Warm Bath)
- Knee-chest Position to Shift Baby's Weight Off the Lower Abdomen and Relieve Discomfort
- Relaxation Exercises
- Careful Use of Other Therapies (e.g., Acupuncture, Chiropractic, Physiotherapy)

Future Research

This review has identified some areas where future research is clearly needed to improve the evidence for practice. These areas are identified below.

- Research focused on the prevention and/or reduction of back pain/discomfort in pregnancy is needed.
- Because back pain/discomfort is largely invisible, further research is required to obtain satisfactory methods of objectively defining and measuring back pain/discomfort.
- Evidence is not yet available to justify the efficacy and safety of alternate therapies in mainstream practice, much less during pregnancy. This would be a valuable future direction of research for the benefit of both women and health professionals alike.
- None of the research cited refers to the implications for back pain/discomfort from the physical demands of pregnant women looking after small children. All of these manifestations must have enormous implications on the pregnant woman's quality of life, yet no studies assess this.
- All clinical manifestations of back pain/discomfort in pregnancy have a direct influence on quality of life, yet the impact on women's quality of life during pregnancy have not yet been a focus of research. This highlights the strengths of, and need for, qualitative research on back pain/discomfort in pregnancy so that optimal understanding can be achieved. Much of the research already conducted would be enhanced if women's subjective experiences of living with back pain/discomfort during the perinatal period were also better understood (Thomas, 1997).

Summary

The review of literature on back pain/discomfort in pregnancy currently raises more questions than answers. No two studies are the same, and much of the information resulting from research remains inconclusive and inconsistent. There is an obvious lack of qualitative data and, although research in this area is lacking and knowledge is limited, findings from research that has been conducted could be implemented in practice. As health professionals, we need to ask, "How much back pain/discomfort that women experience perinatally is temporary and how much back pain/discomfort during pregnancy is unnecessary?" This question can be answered by health professionals and women together by initiating positive

change, focusing on what is known, listening to what women are saying during pregnancy, and strengthening our practices by using what evidence is available. For too long, back pain/discomfort in pregnancy has been viewed by many as "normal" and to be "expected" in pregnancy. If women are offered ways of preventing back pain/discomfort in pregnancy, they may expect the condition, but they will not need to accept it.

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Excelling Beyond the Ordinary

The world is moving so fast these days that the man who says it can't be done is generally interrupted by someone doing it.

—Harry Emerson Fosdick

Keep away from people who try to belittle your ambitions. Small people always do that, but the really great make you feel that you, too, can become great.

—Mark Twain